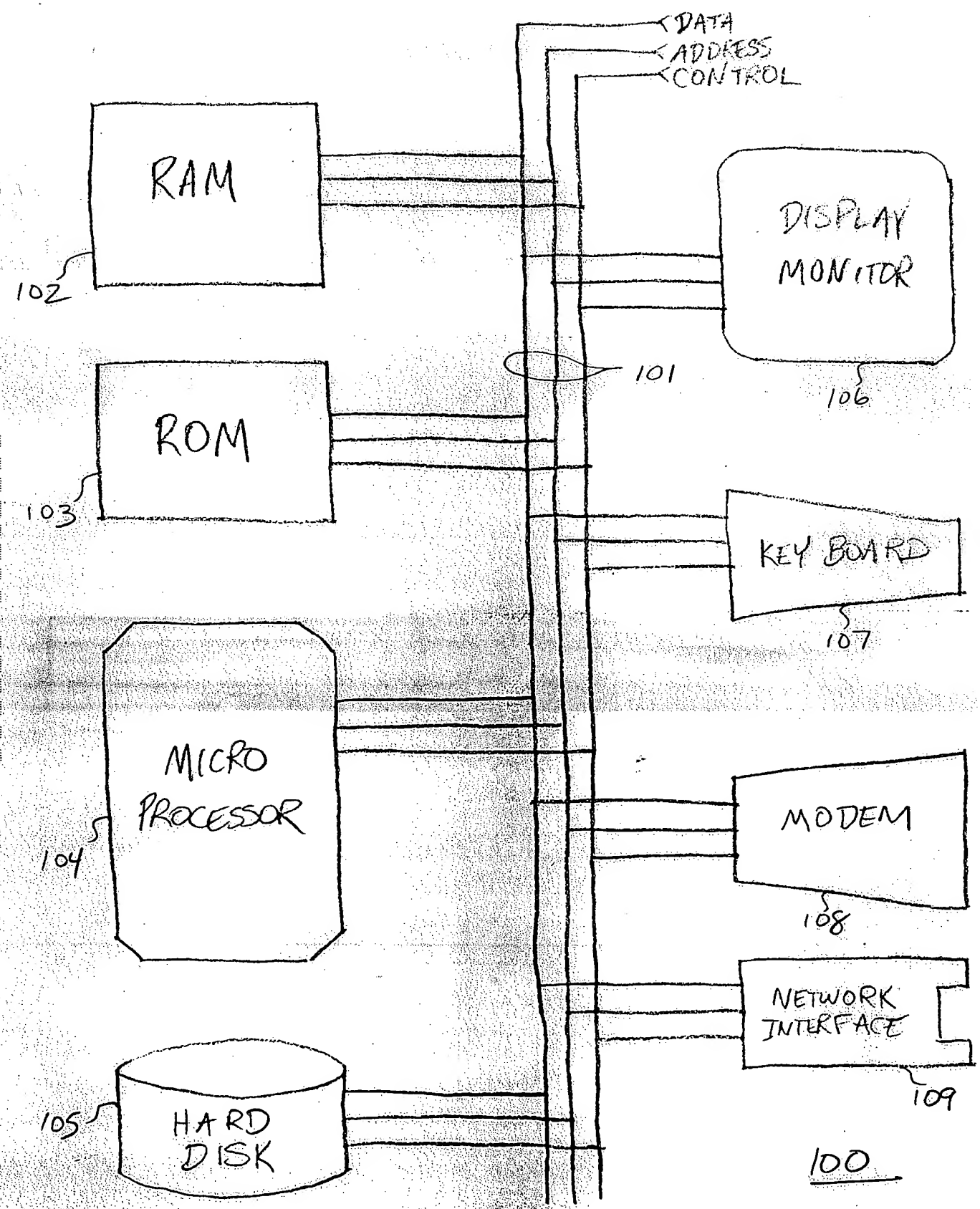

DATA
ADDRESS
CONTROL
RAM
102
DISPLAY MONITOR
106
101
ROM
103
KEY BOARD
107
MICRO PROCESSOR
104
MODEM
108
NETWORK INTERFACE
109
HARD DISK
105
100

FIGURE 1

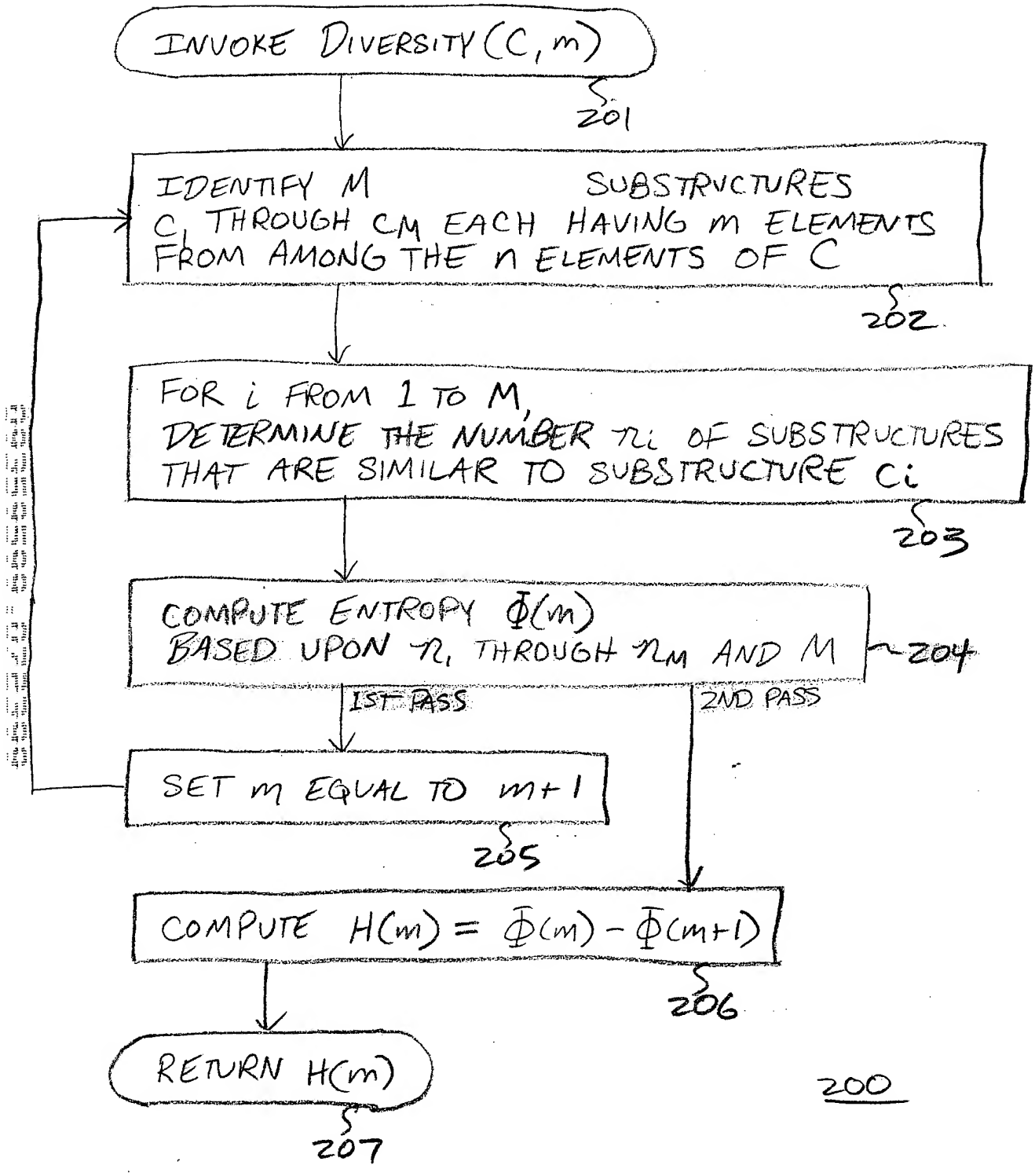

INVOKE DIVERSITY(C, m)
201
IDENTIFY M SUBSTRUCTURES C1 THROUGH CM EACH HAVING m ELEMENTS FROM AMONG THE n ELEMENTS OF C
202
FOR i FROM 1 TO M, DETERMINE THE NUMBER ni OF SUBSTRUCTURES THAT ARE SIMILAR TO SUBSTRUCTURE Ci
203
COMPUTE ENTROPY Φ(m) BASED UPON n1 THROUGH nM AND M
204
1ST PASS
2ND PASS
SET m EQUAL TO m+1
205
COMPUTE H(m) = Φ(m) − Φ(m+1)
206
RETURN H(m)
207
200

FIGURE 2

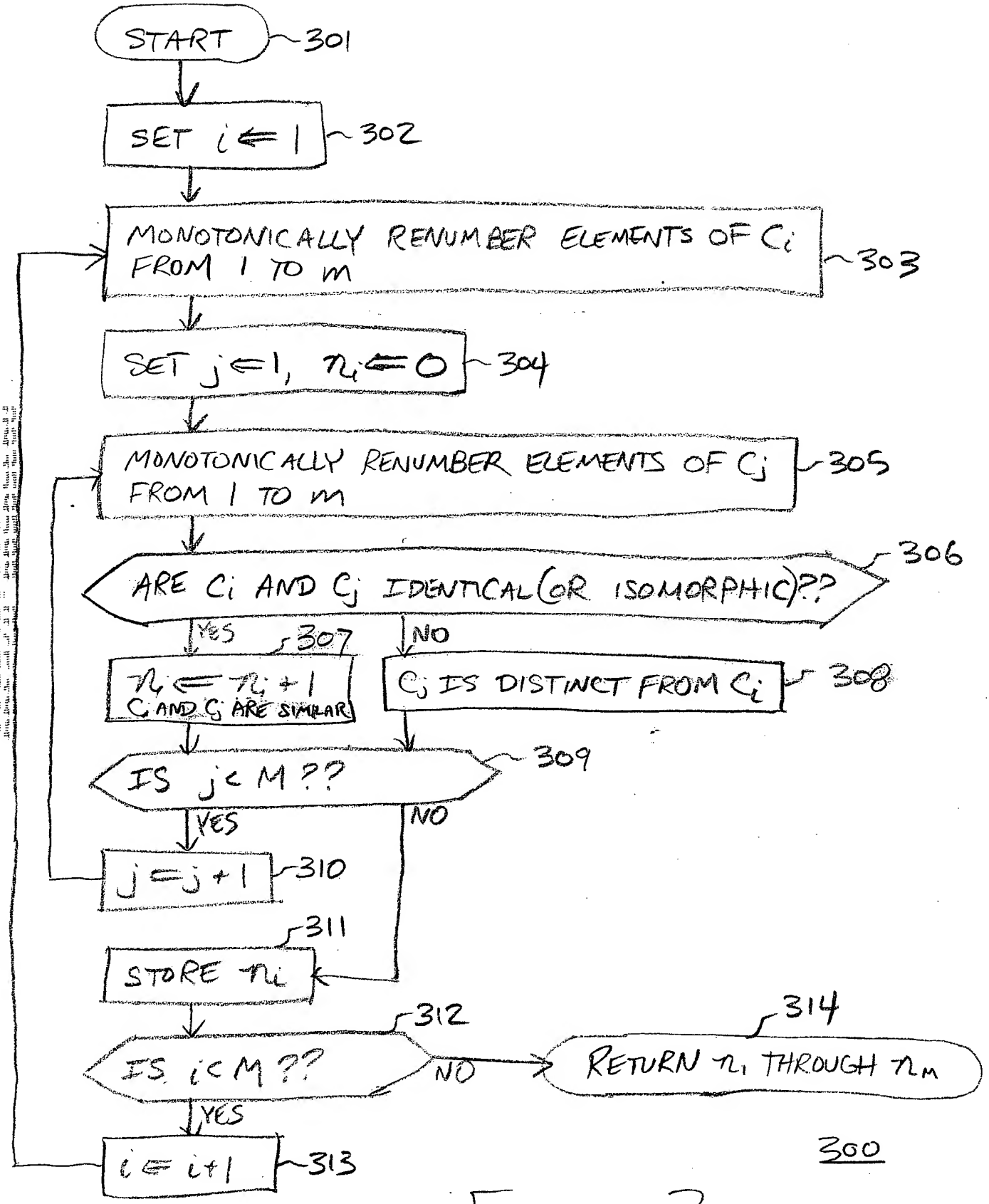

START
301
SET i ⇐ 1
302
MONOTONICALLY RENUMBER ELEMENTS OF Ci FROM 1 TO m
303
SET j ⇐ 1, ni ⇐ 0
304
MONOTONICALLY RENUMBER ELEMENTS OF Cj FROM 1 TO m
305
ARE Ci AND Cj IDENTICAL (OR ISOMORPHIC)??
306
YES
307
ni ⇐ ni + 1
Ci AND Cj ARE SIMILAR
NO
Cj IS DISTINCT FROM Ci
308
IS j < M??
309
YES
NO
j ⇐ j + 1
310
311
STORE ni
312
IS i < M??
NO
314
RETURN n1 THROUGH nM
YES
i ⇐ i + 1
313
300

FIGURE 3

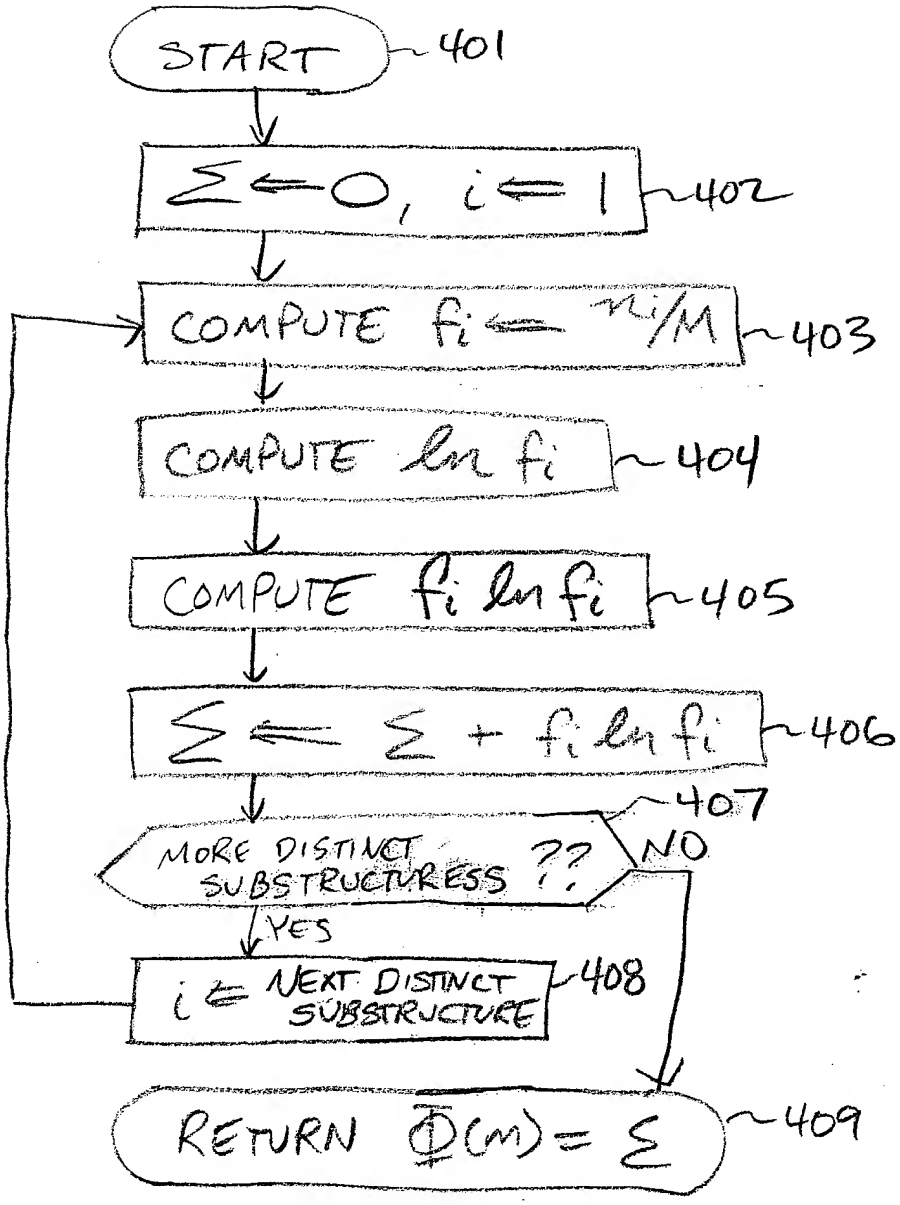

START
401
Σ ⇐ 0, i ⇐ 1
402
COMPUTE fi ⇐ ni/M
403
COMPUTE ln fi
404
COMPUTE fi ln fi
405
Σ ⇐ Σ + fi ln fi
406
407
MORE DISTINCT SUBSTRUCTURESS ??
NO
YES
i ⇐ NEXT DISTINCT SUBSTRUCTURE
408
RETURN Φ(m) = Σ
409
400

FIGURE 4

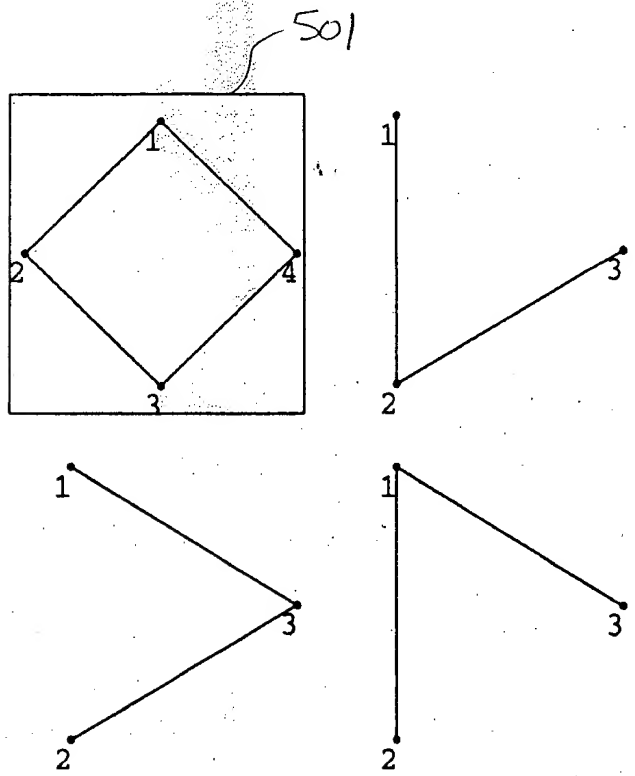
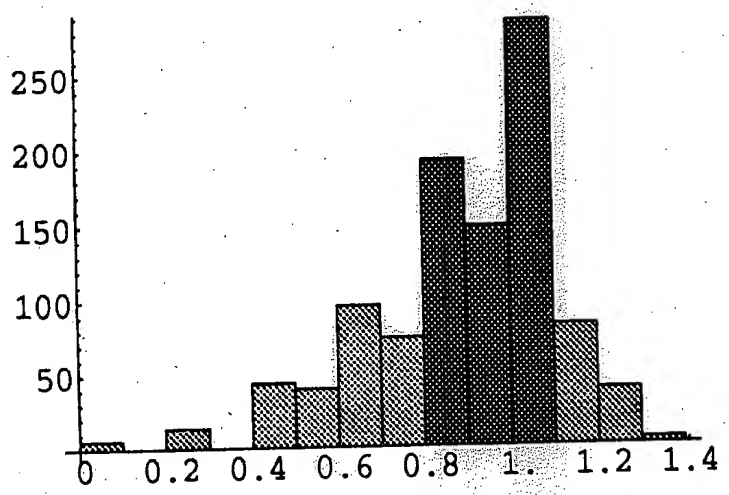


FIGURE 5

i	SUBSTRUCTURE C_i	MONOTONICALLY RENUMBERED SUBSTRUCTURE	DISTINCT SIMILARITY GROUP	SIMILARITY COUNT n_i
1	1-2-3	1-2-3	A	2
2	2-1-4	2-1-3	B	1
3	1-4-3	1-3-2	C	1
4	2-3-4	1-2-3	A	2

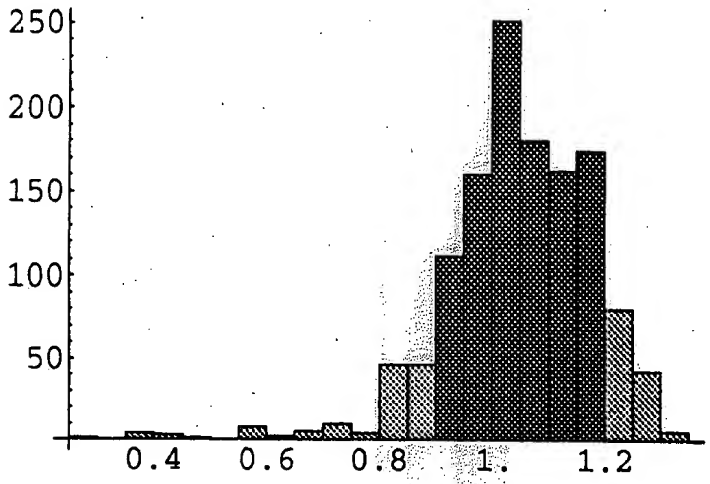
600

FIGURE 6



700

FIGURE 7



800

FIGURE 8

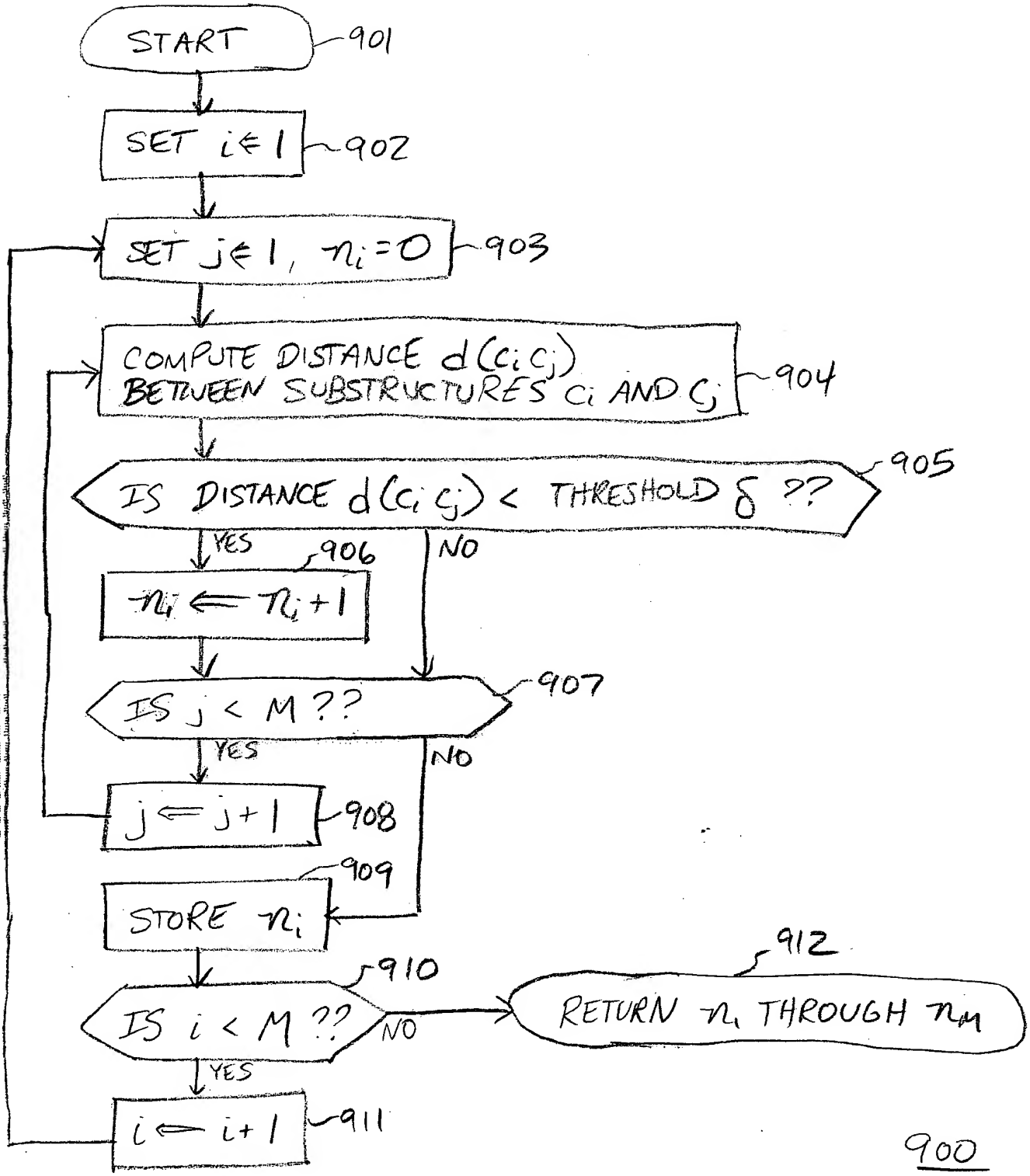

START
901
SET i ⇐ 1
902
SET j ⇐ 1, n_i = 0
903
COMPUTE DISTANCE d(Ci Cj) BETWEEN SUBSTRUCTURES Ci AND Cj
904
IS DISTANCE d(Ci Cj) < THRESHOLD δ ??
905
YES
NO
906
$n_i \Leftarrow n_i + 1$
IS j < M ??
907
YES
NO
j ⇐ j + 1
908
909
STORE n_i
910
IS i < M ??
NO
912
RETURN n_1 THROUGH n_M
YES
i ⇐ i + 1
911
900

FIGURE 9

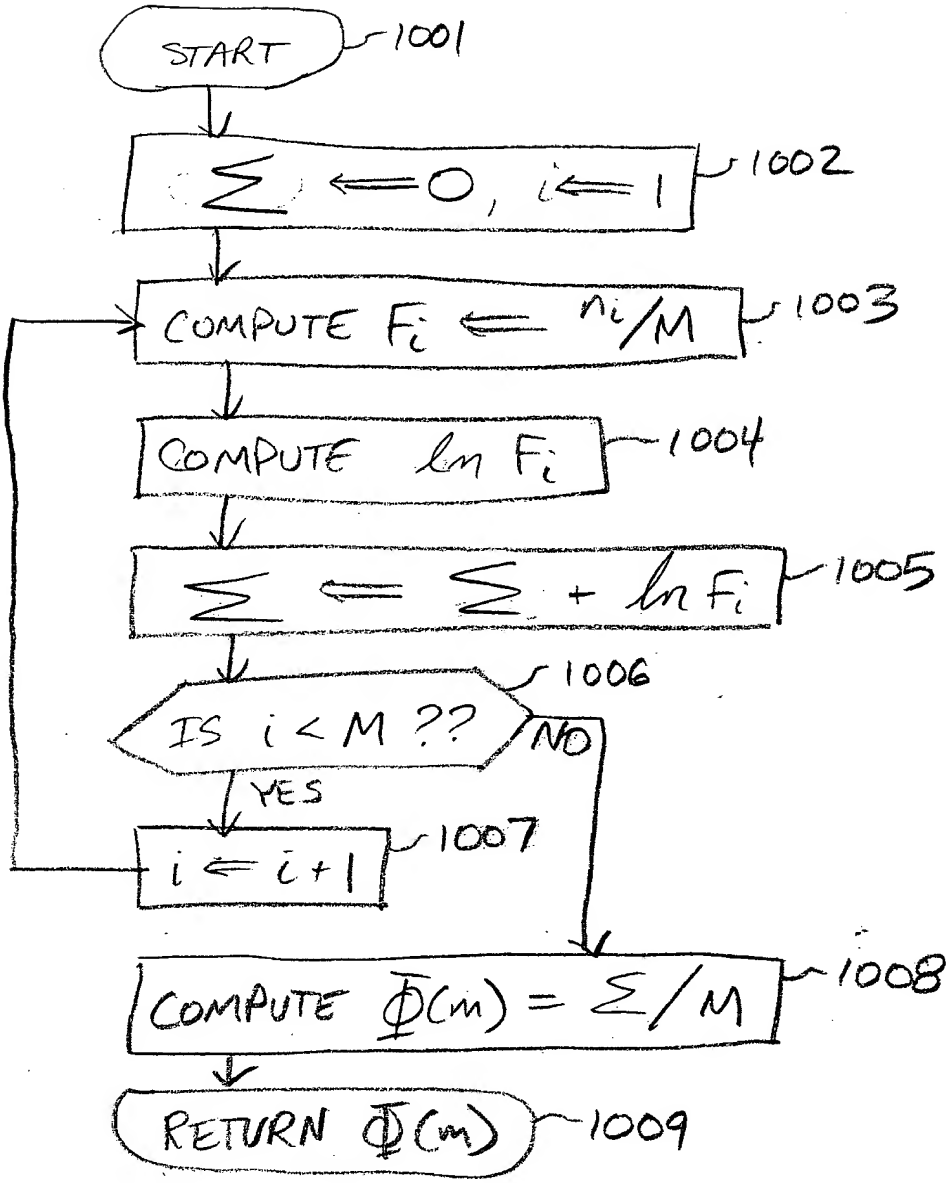

START
1001
$\Sigma \Leftarrow 0,\ i \Leftarrow 1$
1002
COMPUTE $F_i \Leftarrow n_i / M$
1003
COMPUTE $\ln F_i$
1004
$\Sigma \Leftarrow \Sigma + \ln F_i$
1005
IS $i < M$??
1006
NO
YES
$i \Leftarrow i+1$
1007
COMPUTE $\Phi(m) = \Sigma / M$
1008
RETURN $\Phi(m)$
1009
1000

FIGURE 10

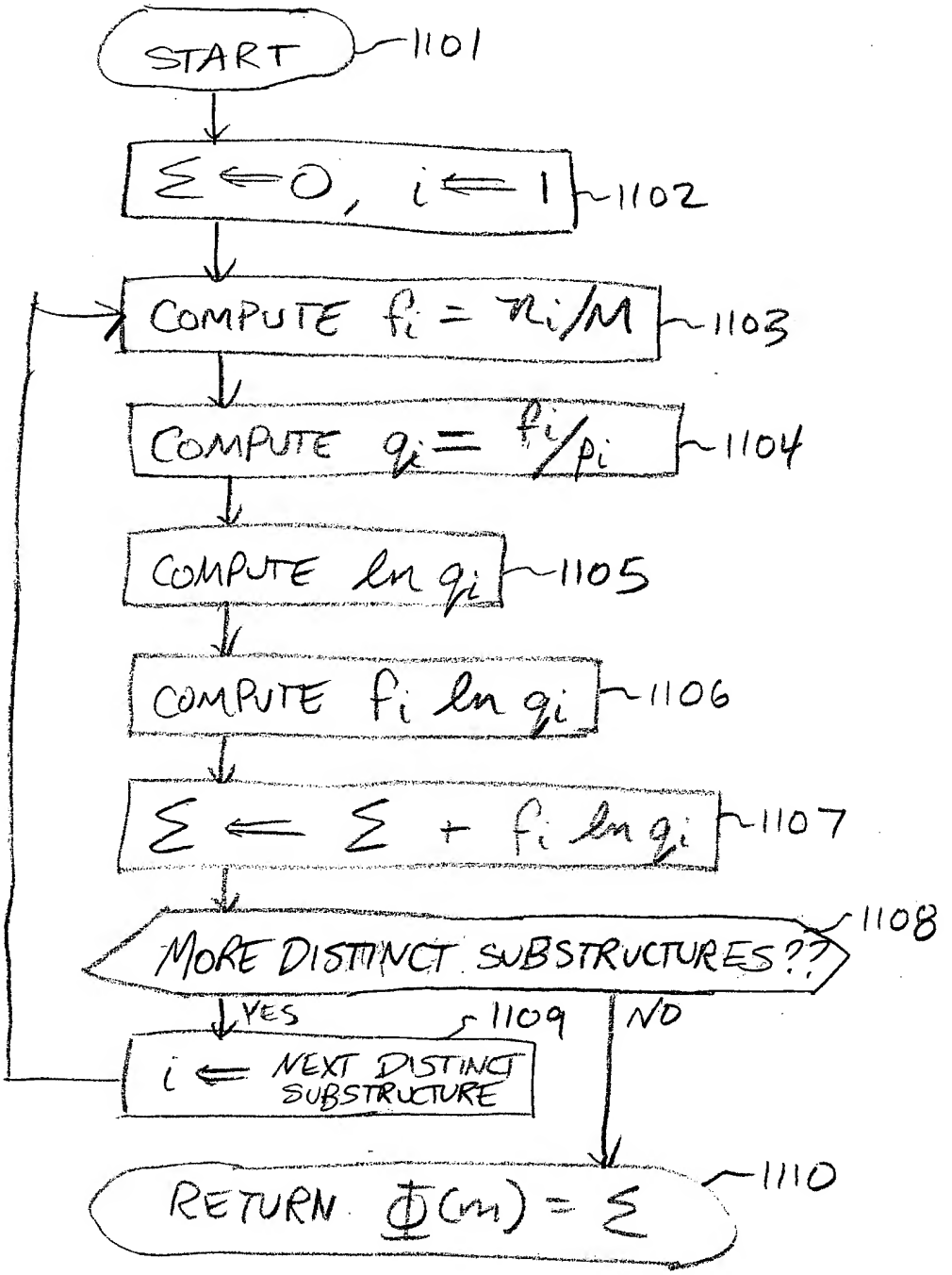

START
1101
$\Sigma \Leftarrow 0,\ i \Leftarrow 1$
1102
COMPUTE $f_i = r_i / M$
1103
COMPUTE $q_i = f_i / p_i$
1104
COMPUTE $\ln q_i$
1105
COMPUTE $f_i \ln q_i$
1106
$\Sigma \Leftarrow \Sigma + f_i \ln q_i$
1107
MORE DISTINCT SUBSTRUCTURES??
1108
YES
1109
NO
$i \Leftarrow$ NEXT DISTINCT SUBSTRUCTURE
RETURN $\Phi(m) = \Sigma$
1110
1100

FIGURE 11